Managing Beachfront Lighting for Sea Turtle Conservation

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The presence of lights on or near nesting beaches can have serious impacts on nesting and hatchling sea turtles. They can attract hatchlings away from the ocean, making them more vulnerable to dehydration and exhaustion, predation, or automobiles when they end up on coastal roadways. Adult females attempting to return to sea after nesting also can become disoriented and have difficulty making it back to the ocean. In addition, studies have shown that brightly lit beaches are used less frequently for nesting, thereby making otherwise suitable nesting habitat unsuitable.

In determining whether a light source can harm sea turtles, there is a simple rule of thumb: If an observer located anywhere on the beach can see the actual light source, then that lighting can harm sea turtles because of its potential to broadcast light directly onto the beach. However, indirect lighting of the beach by reflected light can also be a problem. Additionally, all light contributes to a cumulative sky glow, which can create problems for sea turtles, especially on cloudy nights.

Many solutions are available for correcting problem lights while still meeting human safety and security needs. The key to protecting turtles from beachfront lighting is not to prohibit light, but to manage it. Light management is the process of getting light where it is most needed and keeping light away from areas where it can do harm. Light management can be accomplished by using one or more of the following techniques:

- Turning off unnecessary lighting.
- Using timing restrictions on lighting during the sea turtle nesting and hatching season.
- Limiting the duration a light is on with the use of motion detectors.
- Using good light property control, such as lowering, shielding, recessing, and redirecting lights.
- Planting and/or maintaining native vegetative light screens.
- Modifying the color of light by using long-wavelength light sources, which are less attractive to sea turtles.
- Closing curtains or blinds at night, moving lamps away from beachfront windows, and/or applying window tinting to those windows and sliding glass doors that are visible from the beach.

Suggested References:

Witherington, B.E. 1996. The problem of photopollution for sea turtles and other nocturnal animals. Pages

303-328 *in* Clemmons, J.R., and R. Buchholz (eds.). Behavioral Approaches to Conservation in the Wild. Cambridge University Press, Cambridge, England.

Witherington, B.E., and R.E. Martin. 2000. Understanding, assessing, and resolving light-pollution problems on sea turtle nesting beaches. FMRI Technical Report TR-2, 2nd edition. Florida Marine Research Institute, St. Petersburg, Florida. 73pp.

In addition, a brochure titled "Sea Turtles and Lights" is available from the Florida Power & Light Company by calling 1-800-DIAL-FPL.